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DEFRANK

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PATENT APPLICATION
ATTORNEY DOCKET NO. AUS9-2000-0596-US1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Cabezas et al.

Confirmation No.: 1934

Application No.: 09/737,455

Examiner: P. Yanchus

Filing Date: Dec. 14, 2000

Group Art Unit: 2116

Title: METHOD AND APPARATUS FOR ENHANCED POWER CONSUMPTION HANDLING OF
BUS-CONTROLLED COMPONENTS

Mail Stop Appeal Brief-Patents
Commissioner For Patents
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TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on June 1, 2005.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

() (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

() one month \$120.00
() two months \$450.00
() three months \$1020.00
() four months \$1590.00

() The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **09-0447** the sum of **\$500.00**. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account **09-0447** pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account **09-0447** under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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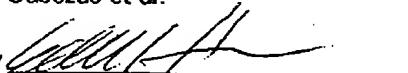
Typed Name: Edmond A. DeFrank

Signature: 

Respectfully submitted,

Cabezas et al.

By



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EDMOND A. DEFRANK
 By _____


 Signature

Attorney Docket No: AUS9-2000-0596-US1

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of
 Cabezas et al.

: Group Art Unit: 2116

Entitled: **METHOD AND APPARATUS FOR
 FOR ENHANCED POWER
 CONSUMPTION HANDLING OF
 BUS-CONTROLLED COMPONENTS**

: Examiner: Paul Yanchus III

Serial No.: 09/737,455

Filing Date: December 14, 2000

APPEAL BRIEF**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee, International Business Machines Corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to the assignee which will directly affect or be directly affected by or have a bearing on the Board's decision pending the appeal.

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III. STATUS OF CLAIMS

Claims 1-16 stand rejected. Thus, the Appellants file the present Appeal Brief in response to the Examiner's rejection of claims 1-16 in a Final Office Action dated March 1, 2004. Claims 1-16 represent all of the remaining claims from the originally filed application. The Appellants respectfully appeal the Examiner's final rejection of Claims 1-16.

IV. STATUS OF AMENDMENTS

The last amendment was filed under 37 CFR 1.111 on December 8, 2004, in response to the first Office Action dated September 9, 2004, and after a telephonic conference with the Examiner on December 2, 2004. The amendments to claims 1, 7, and 12 in the December 8, 2004 amendment formally reflected the proposed modifications mentioned during the December 2, 2004 teleconference between the Appellants' attorney and the Examiner. This amendment was intended to place all of the claims in condition for allowance. However, in response to this amendment, the Examiner sent the March 1, 2005 Final Office Action. The present Appeal is the Appellants' formal response to this Final Office Action. As such, claims 1-16 remain as presented in the December 8, 2004 amendment.

V. SUMMARY OF THE INVENTION

In general, the present invention relates to a method and apparatus for handling power consumption of a bus-controlled component such that the power requirements of the bus-controlled component are met without drawing excessive power from the computer bus. In particular, the method and apparatus of the present invention handles power consumption of a bus-controlled component without drawing power from adjacent bus slots. The method and apparatus also adheres to common standards for computer buses by not drawing a greater amount of power from the bus slot than allowed by the bus standard, thereby increasing the reliability and longevity of the computer bus and components.

The present invention solves problems associated with power use with current

bus-controlled components, such as PCI or AGP bus standards. For instance, PCI and AGP are becoming increasingly complex and are often expected to drive other power-consuming devices. In order to drive these other devices, bus-controlled components typically draw 100 watts or more of power from the bus connection (or slot) into which they are inserted. There are currently two techniques used to deal with the additional power requirements. First, the bus-controlled component is designed to draw power from more than one bus slot even though it is inserted into a single bus slot. Depending on the power required, the bus-component could be drawing power from its own bus slot as well as several adjacent bus slots. This technique effectively disables adjacent bus slots and can severely limit the number of bus-components that may be used in a computer. In addition, the reliability and longevity of the bus-controlled components are degraded.

Another technique used to deal with additional power requirements is to simply ignore the computer bus standards and draw all the required power from a single bus slot into which the bus-controlled component is inserted. The problem with this technique, however, is that the reliability and performance of the entire computer bus is adversely affected. Moreover, this technique merely avoids the problem by allowing the problem to reintroduce itself as power demands for future bus-controlled components increase. The use of either technique involves the risk of damaging the computer bus or other computer system components that are not designed to handle the increased power load.

The present invention overcomes these limitations by supplying power to the device from an integrated power supply via a bus slot up to a threshold allowed by a computer bus standard and then supplying power directly from a non-integrated power supply without modifying or violating any of the existing computer bus standards. Thus, no power is drawn from adjacent bus connections (or slots), no adjacent bus slots are disabled, and the reliability, longevity and integrity of the computer bus and the bus-controlled components are not compromised.

VI. ISSUES**A. Patentability of Claims 1-2, 4-12, and 14-16**

Whether claims 1-2, 4-12, and 14-16 are unpatentable under 35 U.S.C. § 103(a) over Gilbert (U.S. Patent No. 6,347,011) in view of Lee (U.S. Patent No. 5,852,544).

B. Patentability of Claims 3 and 13

Whether claims 3 and 13 are unpatentable under 35 U.S.C. § 103(a) over Gilbert (U.S. Patent No. 6,357,011), and Lee (U.S. Patent No. 5,852,544) in view of Kang (U.S. Patent No. 6,253,329).

VII. GROUPING OF CLAIMS

For each ground of rejection which appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand or fall together.

VIII. ARGUMENTS**A. The Rejection of claims 1-2, 4-12, and 14-16.****1. The Examiner's Rationale for the rejection of the claims.**

The Examiner rejected claims 1-2, 4-12, and 14-16 under 35 U.S.C. § 103(a) as being unpatentable over Gilbert (U.S. Patent No. 6,357,011), in view of Lee (U.S. Patent No. 5,852,544). The Examiner stated that although Gilbert "...does not disclose supplying power to the bus-controlled component from a non-integrated power supply of the computer...Lee discloses a system in which a computer power supply directly supplies power to both components located inside the computer and to peripheral components that are located outside of the computer." The Examiner further stated that "...[I]t would have been obvious to one of ordinary skill in the art to modify the Gilbert method to supply power to the USB peripheral device from a computer power supply instead of a battery located in the USB peripheral device in the event that the USB peripheral device requires more power than the USB peripheral may supply.

Using a computer power supply to supply extra power to a peripheral device eliminates the need for a battery in the peripheral device and therefore reduces the size and cost of the peripheral device." (page 2, last full paragraph continuing to page 3, first partial paragraph of the March 1, 2005 Final Office Action).

2. The Appellants submit that the Examiner improperly ignored limitations of the Appellants' claimed invention that are not disclosed by the combined cited references, thus, the combined cited references cannot render the claims obvious, so the rejection must be withdrawn.

According to case law and the MPEP, all of the claimed elements of an Appellant's invention must be considered. In re Kotzab, 55 USPQ 2d 1313, 1318 (Fed. Cir. 2000). MPEP 2143. If one of the elements of the Appellant's invention is missing from or not taught in the cited references and the Appellant's invention has advantages not appreciated by the cited references, then no prima facie case of obviousness exists. (MPEP 2143.03). The Federal Circuit Court has stated that it was error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein. In Re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Specifically, claim 1 recites in part "...supplying power to the bus-controlled component from an integrated power supply via a bus connection of the computer...determining whether the power supplied exceeds a threshold...and...if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer." Similarly, claim 12 recites in part "...an input area configured to receive a bus-controlled component and an output area configured to be inserted into a bus slot that supplies power to the bus-controlled component...a power sensor that determines whether the bus slot has exceeded a power threshold...and...a power supply lead coupled to an external power supply that supplies power to the bus-controlled component via the bus power handling device if the power threshold is exceeded." Also, claim 7 recites in part "...a bus slot supplying power to the bus-controlled component...and...a bus power handling device connected directly

to a power supply of the computer for supplying power directly to the bus-controlled component if a bus slot power threshold is exceeded."

In contrast, the combined references do not disclose all of the above elements of the Appellants' claimed invention. Namely, Gilbert merely discloses "...a peripheral with a rechargeable battery that stores energy during inactive periods for use during active periods..." (see col. 1, lines 55-56 of Gilbert), while Lee simply discloses "...an internal power supply that powers both peripherals located within the housing of a computer and peripherals located external to the housing of the computer." (see Abstract of Lee).

Although Lee discloses an internal power supply that supplies "...power to both components located inside the chassis and to peripheral components located external to the chassis..." (see Abstract of Lee), the combined references are still missing the Appellants' claimed supplying power to the bus-controlled component from an integrated power supply **via a bus connection** of the computer. Instead, Lee explicitly discloses a bracket mechanically connected to the chassis that allows power to pass from the internal power supply to external peripherals through male/female connector integrated in the bracket (see col. 3, lines 13-65 and FIGS. 1-3 of Lee). Clearly, the mechanical bracket in Lee does not supply power via a bus connection of the computer, like the Appellants' claimed invention. Instead, power is supplied to external peripherals in Lee through a cable that runs through the mechanical bracket that is mechanically mounted to the computer chassis and not via a bus connection of the computer.

Therefore, the Examiner took Lee out of context and used improper hindsight when he summarily concluded that Gilbert in combination with Lee discloses all of the Appellants' claimed elements. This is because nowhere in the combined references is there a disclosure of the Appellants' claimed supplying power via a bus connection of the computer to the bus-controlled component from an integrated power supply and if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer.

The "...combination of elements...in a manner that reconstructs the applicant's invention only with the benefit of hindsight...is insufficient to present a *prima facie* case

of obviousness." There must be some reason, suggestion, or motivation found in the references whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself. In re Oetiker, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992) [emphasis added].

Hence, since the Examiner's rejection is based on hindsight, the rejection is improper and must be withdrawn. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986). The case law is well settled and forbids Examiners from taking a reference out of context and using the benefit of hindsight to make improper conclusions and manufacture elements that are not disclosed in the combined references, which is clearly the situation in this case. Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). Therefore, since the cited references are missing at least one limitation of the Appellants' claims 1, 7 and 12, the rejection of claims 1-2, 4-12, and 14-16 should be withdrawn. In Re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Further, even though the combination of Gilbert with Lee do not produce all of the elements of the claimed invention, these references should not even be considered together since the combination of Gilbert with Lee teaches away from the claimed invention. This is because Lee explicitly discloses that the external peripheral devices are purposely "...designed to use only internal supply voltage..." from the mechanical bracket [emphasis added]. Thus, unlike the Appellants' claimed invention, the peripherals devices in Lee cannot receive power from a non-integrated power supply of the computer if a threshold is exceeded.

Consequently, since Lee explicitly states that its peripheral devices are specifically "designed to use only internal supply voltage," the main function, purpose and spirit of Lee would be destroyed if peripheral devices in Lee received power from a non-integrated power supply if a threshold is exceeded, like the Appellants' claimed invention. As such, this "teaching away" prevents obviousness from being established by combining these references. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). This failure of the cited references, either alone or in combination, to disclose, suggest or provide motivation for

the Applicant's claimed invention indicates a lack of a prima facie case of obviousness (MPEP 2143).

B. The Rejection of claims 3 and 13.

1. The Examiner's Rationale for the rejection of the claims.

The Examiner rejected claims 3 and 13 under 35 U.S.C. §103(a) as being unpatentable over Gilbert (U.S. Patent No. 6,357,011), and Lee (U.S. Patent No. 5,852,544) in view of Kang (U.S. Patent No. 6,253,329). The Examiner stated that although Gilbert and Lee "...do not teach that the non-integrated power supply supplies all of the power when the threshold is exceeded...Kang discloses a device that only receives power from a non-integrated power source...when the necessary power requirements exceed the limits of the integrated power supply...It would have been obvious to modify the method and system taught by Gilbert and Lee to enable the non-integrated power supply to supply all of the power to the peripheral device..." (see page 7, second full paragraph of the March 1, 2005 Final Office Action).

2. The Appellants submit that the Examiner improperly ignored limitations of the Appellants' claimed invention that are not disclosed by the combined cited references, thus, the combined cited references cannot render the claims obvious, so the rejection must be withdrawn.

As argued and for each of the same reasons stated in Section A2. above, Appellants submit that the Gilbert and Lee references in combination with the Kang reference still does not disclose, teach, or suggest all of the claimed features of claimed invention. Specifically, when Kang is combined with Gilbert and Lee, the combination is still missing the Appellants' claimed supplying power via a bus connection of the computer to the bus-controlled component from an integrated power supply and if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer, as argued above.

Further, even though the combination of Gilbert with Lee and Kang do not produce all of the elements of the claimed invention, these references should not even

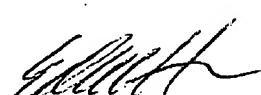
be considered together since the combination of Gilbert with Lee and Kang teaches away from the claimed invention as argued above. Moreover, since dependent claims 3 and 13 depend from the above-argued independent claims 1 and 12, respectively, they are therefore patentable on the same basis. (MPEP § 2143.03). Therefore, because the cited reference does not disclose, teach or suggest the limitations of the claims, as discussed above, this rejection must be withdrawn because the cited reference cannot render the Appellant's claims obvious. In Re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

IX. CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 1-18 was erroneous, and reversal of the Examiner's decision is respectfully requested. Accordingly, the Appellants submit that all pending claims (claims 1-18) in the current case should be allowed.

Respectfully submitted,

Dated: July 31, 2005



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X. APPEAL BRIEF APPENDIX

The following represents claims 1-16 that are involved in the appeal of the above-identified application and are provided in accordance with the requirements of 37 CFR 1.192(c)(7).

1. A method for supplying power to a bus-controlled component of a computer, comprising:
 - supplying power to the bus-controlled component from an integrated power supply via a bus connection of the computer;
 - determining whether the power supplied exceeds a threshold; and
 - if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer.
2. The method of claim 1, wherein if the threshold is exceeded the integrated power supply supplies power up to the threshold and the non-integrated power supply supplies any excess power.
3. The method of claim 1, wherein if the threshold is exceeded the non-integrated power supply supplies all the power.
4. The method of claim 1, wherein high-power components on the bus-controlled component are supplied power from the non-integrated power supply and low-power components on the device are supplied power from the integrated power supply.
5. The method of claim 1, wherein the device is a bus-controlled component and the integrated power supply is a bus slot capable of receiving the bus-controlled component.

6. The method of claim 1, wherein a power sensor is used to determine whether the threshold has been exceeded.

7. A bus power system of a computer for supplying power to a bus-controlled component, comprising:

a bus slot supplying power to the bus-controlled component; and
a bus power handling device connected directly to a power supply of the computer for supplying power directly to the bus-controlled component if a bus slot power threshold is exceeded.

8. The bus power handling device of claim 7, wherein the bus power handling device is disposed between the bus slot and the bus-controlled component.

9. The bus power system of claim 7, wherein the bus power handling device is disposed on the bus-controlled component.

10. The bus power system of claim 8, further including a modified bracket attached to the bus-controlled component for securing the bus-controlled component within a computer case.

11. The bus power system of claim 7, further comprising a power sensor disposed on the bus power handling device that determines whether the bus slot power threshold has been exceeded.

12. A bus power handling device of a computer, comprising:
 - an input area configured to receive a bus-controlled component and an output area configured to be inserted into a bus slot that supplies power to the bus-controlled component;
 - a power sensor that determines whether the bus slot has exceeded a power threshold; and
 - a power supply lead coupled to an external power supply that supplies power to the bus-controlled component via the bus power handling device if the power threshold is exceeded.
13. The bus power handling device of claim 12, wherein the bus-controlled component obtains power from the bus slot until the power threshold is exceeded at which time the power is obtained from the power supply.
14. The bus power handling device of claim 12, wherein the bus-controlled component obtains power from the bus slot and any power in excess of the power threshold from the power supply.
15. The bus power handling device of claim 12, wherein the power threshold is a maximum power allowed by a computer bus standard for the bus slot.
16. The bus power handling device of claim 12, wherein bus slot supplies power to low-power devices on the bus-controlled component and the power supply supplies power to the high-power devices on the bus-controlled component and wherein the power supplied by the bus slot does not exceed the power threshold.

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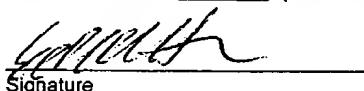
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Attorney Docket No: AUS9-2000-0596-US1

PATENT APPLICATION

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|----------------------|---------------------------|----------------------------|
| In re Application of | : | Group Art Unit: 2116 |
| Cabezas et al. | : | |
| Entitled: | METHOD AND APPARATUS FOR | : |
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| Serial No.: | 09/737,455 | Examiner: Paul Yanchus III |
| Filing Date: | December 14, 2000 | |

APPEAL BRIEF

I. REAL PARTY IN INTEREST

The real party in interest is the assignee, International Business Machines Corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to the assignee which will directly affect or be directly affected by or have a bearing on the Board's decision pending the appeal.

III. STATUS OF CLAIMS

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V. SUMMARY OF THE INVENTION

In general, the present invention relates to a method and apparatus for handling power consumption of a bus-controlled component such that the power requirements of the bus-controlled component are met without drawing excessive power from the computer bus. In particular, the method and apparatus of the present invention handles power consumption of a bus-controlled component without drawing power from adjacent bus slots. The method and apparatus also adheres to common standards for computer buses by not drawing a greater amount of power from the bus slot than allowed by the bus standard, thereby increasing the reliability and longevity of the computer bus and components.

The present invention solves problems associated with power use with current

bus-controlled components, such as PCI or AGP bus standards. For instance, PCI and AGP are becoming increasingly complex and are often expected to drive other power-consuming devices. In order to drive these other devices, bus-controlled components typically draw 100 watts or more of power from the bus connection (or slot) into which they are inserted. There are currently two techniques used to deal with the additional power requirements. First, the bus-controlled component is designed to draw power from more than one bus slot even though it is inserted into a single bus slot. Depending on the power required, the bus-component could be drawing power from its own bus slot as well as several adjacent bus slots. This technique effectively disables adjacent bus slots and can severely limit the number of bus-components that may be used in a computer. In addition, the reliability and longevity of the bus-controlled components are degraded.

Another technique used to deal with additional power requirements is to simply ignore the computer bus standards and draw all the required power from a single bus slot into which the bus-controlled component is inserted. The problem with this technique, however, is that the reliability and performance of the entire computer bus is adversely affected. Moreover, this technique merely avoids the problem by allowing the problem to reintroduce itself as power demands for future bus-controlled components increase. The use of either technique involves the risk of damaging the computer bus or other computer system components that are not designed to handle the increased power load.

The present invention overcomes these limitations by supplying power to the device from an integrated power supply via a bus slot up to a threshold allowed by a computer bus standard and then supplying power directly from a non-integrated power supply without modifying or violating any of the existing computer bus standards. Thus, no power is drawn from adjacent bus connections (or slots), no adjacent bus slots are disabled, and the reliability, longevity and integrity of the computer bus and the bus-controlled components are not compromised.

VI. ISSUES

A. Patentability of Claims 1-2, 4-12, and 14-16

Whether claims 1-2, 4-12, and 14-16 are unpatentable under 35 U.S.C. § 103(a) over Gilbert (U.S. Patent No. 6,347,011) in view of Lee (U.S. Patent No. 5,852,544).

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VIII. ARGUMENTS

A. The Rejection of claims 1-2, 4-12, and 14-16.

1. The Examiner's Rationale for the rejection of the claims.

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Specifically, claim 1 recites in part "...supplying power to the bus-controlled component from an integrated power supply via a bus connection of the computer...determining whether the power supplied exceeds a threshold...and...if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer." Similarly, claim 12 recites in part "...an input area configured to receive a bus-controlled component and an output area configured to be inserted into a bus slot that supplies power to the bus-controlled component...a power sensor that determines whether the bus slot has exceeded a power threshold...and...a power supply lead coupled to an external power supply that supplies power to the bus-controlled component via the bus power handling device if the power threshold is exceeded." Also, claim 7 recites in part "...a bus slot supplying power to the bus-controlled component...and...a bus power handling device connected directly

to a power supply of the computer for supplying power directly to the bus-controlled component if a bus slot power threshold is exceeded."

In contrast, the combined references do not disclose all of the above elements of the Appellants' claimed invention. Namely, Gilbert merely discloses "...a peripheral with a rechargeable battery that stores energy during inactive periods for use during active periods..." (see col. 1, lines 55-56 of Gilbert), while Lee simply discloses "...an internal power supply that powers both peripherals located within the housing of a computer and peripherals located external to the housing of the computer." (see Abstract of Lee).

Although Lee discloses an internal power supply that supplies "...power to both components located inside the chassis and to peripheral components located external to the chassis..." (see Abstract of Lee), the combined references are still missing the Appellants' claimed supplying power to the bus-controlled component from an integrated power supply **via a bus connection** of the computer. Instead, Lee explicitly discloses a bracket mechanically connected to the chassis that allows power to pass from the internal power supply to external peripherals through male/female connector integrated in the bracket (see col. 3, lines 13-65 and FIGS. 1-3 of Lee). Clearly, the mechanical bracket in Lee does not supply power via a bus connection of the computer, like the Appellants' claimed invention. Instead, power is supplied to external peripherals in Lee through a cable that runs through the mechanical bracket that is mechanically mounted to the computer chassis and not via a bus connection of the computer.

Therefore, the Examiner took Lee out of context and used improper hindsight when he summarily concluded that Gilbert in combination with Lee discloses all of the Appellants' claimed elements. This is because nowhere in the combined references is there a disclosure of the Appellants' claimed supplying power via a bus connection of the computer to the bus-controlled component from an integrated power supply and if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer.

The "...combination of elements...in a manner that reconstructs the applicant's invention only with the benefit of hindsight...is insufficient to present a *prima facie* case

of obviousness." There must be some reason, suggestion, or motivation found in the references whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself. In re Oetiker, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992) [emphasis added].

Hence, since the Examiner's rejection is based on hindsight, the rejection is improper and must be withdrawn. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986). The case law is well settled and forbids Examiners from taking a reference out of context and using the benefit of hindsight to make improper conclusions and manufacture elements that are not disclosed in the combined references, which is clearly the situation in this case. Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). Therefore, since the cited references are missing at least one limitation of the Appellants' claims 1, 7 and 12, the rejection of claims 1-2, 4-12, and 14-16 should be withdrawn. In Re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Further, even though the combination of Gilbert with Lee do not produce all of the elements of the claimed invention, these references should not even be considered together since the combination of Gilbert with Lee teaches away from the claimed invention. This is because Lee explicitly discloses that the external peripheral devices are purposely "...designed to use only internal supply voltage..." from the mechanical bracket [emphasis added]. Thus, unlike the Appellants' claimed invention, the peripherals devices in Lee cannot receive power from a non-integrated power supply of the computer if a threshold is exceeded.

Consequently, since Lee explicitly states that its peripheral devices are specifically "designed to use only internal supply voltage," the main function, purpose and spirit of Lee would be destroyed if peripheral devices in Lee received power from a non-integrated power supply if a threshold is exceeded, like the Appellants' claimed invention. As such, this "teaching away" prevents obviousness from being established by combining these references. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). This failure of the cited references, either alone or in combination, to disclose, suggest or provide motivation for

the Applicant's claimed invention indicates a lack of a prima facie case of obviousness (MPEP 2143).

B. The Rejection of claims 3 and 13.

1. The Examiner's Rationale for the rejection of the claims.

The Examiner rejected claims 3 and 13 under 35 U.S.C. §103(a) as being unpatentable over Gilbert (U.S. Patent No. 6,357,011), and Lee (U.S. Patent No. 5,852,544) in view of Kang (U.S. Patent No. 6,253,329). The Examiner stated that although Gilbert and Lee "...do not teach that the non-integrated power supply supplies all of the power when the threshold is exceeded...Kang discloses a device that only receives power from a non-integrated power source...when the necessary power requirements exceed the limits of the integrated power supply...It would have been obvious to modify the method and system taught by Gilbert and Lee to enable the non-integrated power supply to supply all of the power to the peripheral device..." (see page 7, second full paragraph of the March 1, 2005 Final Office Action).

2. The Appellants submit that the Examiner improperly ignored limitations of the Appellants' claimed invention that are not disclosed by the combined cited references, thus, the combined cited references cannot render the claims obvious, so the rejection must be withdrawn.

As argued and for each of the same reasons stated in Section A2. above, Appellants submit that the Gilbert and Lee references in combination with the Kang reference still does not disclose, teach, or suggest all of the claimed features of claimed invention. Specifically, when Kang is combined with Gilbert and Lee, the combination is still missing the Appellants' claimed supplying power via a bus connection of the computer to the bus-controlled component from an integrated power supply and if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer, as argued above.

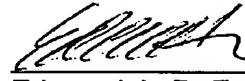
Further, even though the combination of Gilbert with Lee and Kang do not produce all of the elements of the claimed invention, these references should not even

be considered together since the combination of Gilbert with Lee and Kang teaches away from the claimed invention as argued above. Moreover, since dependent claims 3 and 13 depend from the above-argued independent claims 1 and 12, respectively, they are therefore patentable on the same basis. (MPEP § 2143.03). Therefore, because the cited reference does not disclose, teach or suggest the limitations of the claims, as discussed above, this rejection must be withdrawn because the cited reference cannot render the Appellant's claims obvious. In Re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

IX. **CONCLUSION**

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 1-18 was erroneous, and reversal of the Examiner's decision is respectfully requested. Accordingly, the Appellants submit that all pending claims (claims 1-18) in the current case should be allowed.

Respectfully submitted,


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X. APPEAL BRIEF APPENDIX

The following represents claims 1-16 that are involved in the appeal of the above-identified application and are provided in accordance with the requirements of 37 CFR 1.192(c)(7).

1. A method for supplying power to a bus-controlled component of a computer, comprising:
 - supplying power to the bus-controlled component from an integrated power supply via a bus connection of the computer;
 - determining whether the power supplied exceeds a threshold; and
 - if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer.
2. The method of claim 1, wherein if the threshold is exceeded the integrated power supply supplies power up to the threshold and the non-integrated power supply supplies any excess power.
3. The method of claim 1, wherein if the threshold is exceeded the non-integrated power supply supplies all the power.
4. The method of claim 1, wherein high-power components on the bus-controlled component are supplied power from the non-integrated power supply and low-power components on the device are supplied power from the integrated power supply.
5. The method of claim 1, wherein the device is a bus-controlled component and the integrated power supply is a bus slot capable of receiving the bus-controlled component.

6. The method of claim 1, wherein a power sensor is used to determine whether the threshold has been exceeded.

7. A bus power system of a computer for supplying power to a bus-controlled component, comprising:

a bus slot supplying power to the bus-controlled component; and
a bus power handling device connected directly to a power supply of the computer for supplying power directly to the bus-controlled component if a bus slot power threshold is exceeded.

8. The bus power handling device of claim 7, wherein the bus power handling device is disposed between the bus slot and the bus-controlled component.

9. The bus power system of claim 7, wherein the bus power handling device is disposed on the bus-controlled component.

10. The bus power system of claim 8, further including a modified bracket attached to the bus-controlled component for securing the bus-controlled component within a computer case.

11. The bus power system of claim 7, further comprising a power sensor disposed on the bus power handling device that determines whether the bus slot power threshold has been exceeded.

12. A bus power handling device of a computer, comprising:
 - an input area configured to receive a bus-controlled component and an output area configured to be inserted into a bus slot that supplies power to the bus-controlled component;
 - a power sensor that determines whether the bus slot has exceeded a power threshold; and
 - a power supply lead coupled to an external power supply that supplies power to the bus-controlled component via the bus power handling device if the power threshold is exceeded.
13. The bus power handling device of claim 12, wherein the bus-controlled component obtains power from the bus slot until the power threshold is exceeded at which time the power is obtained from the power supply.
14. The bus power handling device of claim 12, wherein the bus-controlled component obtains power from the bus slot and any power in excess of the power threshold from the power supply.
15. The bus power handling device of claim 12, wherein the power threshold is a maximum power allowed by a computer bus standard for the bus slot.
16. The bus power handling device of claim 12, wherein bus slot supplies power to low-power devices on the bus-controlled component and the power supply supplies power to the high-power devices on the bus-controlled component and wherein the power supplied by the bus slot does not exceed the power threshold.

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EDMOND A. DEFRANK
By _____


Signature _____

Attorney Docket No: AUS9-2000-0596-US1

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of : Group Art Unit: 2116
Cabezas et al. :
:

Entitled: **METHOD AND APPARATUS FOR
FOR ENHANCED POWER
CONSUMPTION HANDLING OF
BUS-CONTROLLED COMPONENTS** :
:

Serial No.: 09/737,455 : Examiner: Paul Yanchus III
:

Filing Date: December 14, 2000 :
:

APPEAL BRIEF

I. REAL PARTY IN INTEREST

The real party in interest is the assignee, International Business Machines Corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to the assignee which will directly affect or be directly affected by or have a bearing on the Board's decision pending the appeal.

III. STATUS OF CLAIMS

Claims 1-16 stand rejected. Thus, the Appellants file the present Appeal Brief in response to the Examiner's rejection of claims 1-16 in a Final Office Action dated March 1, 2004. Claims 1-16 represent all of the remaining claims from the originally filed application. The Appellants respectfully appeal the Examiner's final rejection of Claims 1-16.

IV. STATUS OF AMENDMENTS

The last amendment was filed under 37 CFR 1.111 on December 8, 2004, in response to the first Office Action dated September 9, 2004, and after a telephonic conference with the Examiner on December 2, 2004. The amendments to claims 1, 7, and 12 in the December 8, 2004 amendment formally reflected the proposed modifications mentioned during the December 2, 2004 teleconference between the Appellants' attorney and the Examiner. This amendment was intended to place all of the claims in condition for allowance. However, in response to this amendment, the Examiner sent the March 1, 2005 Final Office Action. The present Appeal is the Appellants' formal response to this Final Office Action. As such, claims 1-16 remain as presented in the December 8, 2004 amendment.

V. SUMMARY OF THE INVENTION

In general, the present invention relates to a method and apparatus for handling power consumption of a bus-controlled component such that the power requirements of the bus-controlled component are met without drawing excessive power from the computer bus. In particular, the method and apparatus of the present invention handles power consumption of a bus-controlled component without drawing power from adjacent bus slots. The method and apparatus also adheres to common standards for computer buses by not drawing a greater amount of power from the bus slot than allowed by the bus standard, thereby increasing the reliability and longevity of the computer bus and components.

The present invention solves problems associated with power use with current

bus-controlled components, such as PCI or AGP bus standards. For instance, PCI and AGP are becoming increasingly complex and are often expected to drive other power-consuming devices. In order to drive these other devices, bus-controlled components typically draw 100 watts or more of power from the bus connection (or slot) into which they are inserted. There are currently two techniques used to deal with the additional power requirements. First, the bus-controlled component is designed to draw power from more than one bus slot even though it is inserted into a single bus slot. Depending on the power required, the bus-component could be drawing power from its own bus slot as well as several adjacent bus slots. This technique effectively disables adjacent bus slots and can severely limit the number of bus-components that may be used in a computer. In addition, the reliability and longevity of the bus-controlled components are degraded.

Another technique used to deal with additional power requirements is to simply ignore the computer bus standards and draw all the required power from a single bus slot into which the bus-controlled component is inserted. The problem with this technique, however, is that the reliability and performance of the entire computer bus is adversely affected. Moreover, this technique merely avoids the problem by allowing the problem to reintroduce itself as power demands for future bus-controlled components increase. The use of either technique involves the risk of damaging the computer bus or other computer system components that are not designed to handle the increased power load.

The present invention overcomes these limitations by supplying power to the device from an integrated power supply via a bus slot up to a threshold allowed by a computer bus standard and then supplying power directly from a non-integrated power supply without modifying or violating any of the existing computer bus standards. Thus, no power is drawn from adjacent bus connections (or slots), no adjacent bus slots are disabled, and the reliability, longevity and integrity of the computer bus and the bus-controlled components are not compromised.

VI. ISSUES

A. Patentability of Claims 1-2, 4-12, and 14-16

Whether claims 1-2, 4-12, and 14-16 are unpatentable under 35 U.S.C. § 103(a) over Gilbert (U.S. Patent No. 6,347,011) in view of Lee (U.S. Patent No. 5,852,544).

B. Patentability of Claims 3 and 13

Whether claims 3 and 13 are unpatentable under 35 U.S.C. § 103(a) over Gilbert (U.S. Patent No. 6,357,011), and Lee (U.S. Patent No. 5,852,544) in view of Kang (U.S. Patent No. 6,253,329).

VII. GROUPING OF CLAIMS

For each ground of rejection which appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand or fall together.

VIII. ARGUMENTS

A. The Rejection of claims 1-2, 4-12, and 14-16.

1. The Examiner's Rationale for the rejection of the claims.

The Examiner rejected claims 1-2, 4-12, and 14-16 under 35 U.S.C. § 103(a) as being unpatentable over Gilbert (U.S. Patent No. 6,357,011), in view of Lee (U.S. Patent No. 5,852,544). The Examiner stated that although Gilbert "...does not disclose supplying power to the bus-controlled component from a non-integrated power supply of the computer...Lee discloses a system in which a computer power supply directly supplies power to both components located inside the computer and to peripheral components that are located outside of the computer." The Examiner further stated that "...[I]t would have been obvious to one of ordinary skill in the art to modify the Gilbert method to supply power to the USB peripheral device from a computer power supply instead of a battery located in the USB peripheral device in the event that the USB peripheral device requires more power than the USB peripheral may supply.

Using a computer power supply to supply extra power to a peripheral device eliminates the need for a battery in the peripheral device and therefore reduces the size and cost of the peripheral device." (page 2, last full paragraph continuing to page 3, first partial paragraph of the March 1, 2005 Final Office Action).

2. The Appellants submit that the Examiner improperly ignored limitations of the Appellants' claimed invention that are not disclosed by the combined cited references, thus, the combined cited references cannot render the claims obvious, so the rejection must be withdrawn.

According to case law and the MPEP, all of the claimed elements of an Appellant's invention must be considered. In re Kotzab, 55 USPQ 2d 1313, 1318 (Fed. Cir. 2000). *MPEP 2143*. If one of the elements of the Appellant's invention is missing from or not taught in the cited references and the Appellant's invention has advantages not appreciated by the cited references, then no *prima facie* case of obviousness exists. (*MPEP 2143.03*). The Federal Circuit Court has stated that it was error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein. In Re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Specifically, claim 1 recites in part "...supplying power to the bus-controlled component from an integrated power supply via a bus connection of the computer...determining whether the power supplied exceeds a threshold...and...if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer." Similarly, claim 12 recites in part "...an input area configured to receive a bus-controlled component and an output area configured to be inserted into a bus slot that supplies power to the bus-controlled component...a power sensor that determines whether the bus slot has exceeded a power threshold...and...a power supply lead coupled to an external power supply that supplies power to the bus-controlled component via the bus power handling device if the power threshold is exceeded." Also, claim 7 recites in part "...a bus slot supplying power to the bus-controlled component...and...a bus power handling device connected directly

to a power supply of the computer for supplying power directly to the bus-controlled component if a bus slot power threshold is exceeded."

In contrast, the combined references do not disclose all of the above elements of the Appellants' claimed invention. Namely, Gilbert merely discloses "...a peripheral with a rechargeable battery that stores energy during inactive periods for use during active periods..." (see col. 1, lines 55-56 of Gilbert), while Lee simply discloses "...an internal power supply that powers both peripherals located within the housing of a computer and peripherals located external to the housing of the computer." (see Abstract of Lee).

Although Lee discloses an internal power supply that supplies "...power to both components located inside the chassis and to peripheral components located external to the chassis..." (see Abstract of Lee), the combined references are still missing the Appellants' claimed supplying power to the bus-controlled component from an integrated power supply **via a bus connection** of the computer. Instead, Lee explicitly discloses a bracket mechanically connected to the chassis that allows power to pass from the internal power supply to external peripherals through male/female connector integrated in the bracket (see col. 3, lines 13-65 and FIGS. 1-3 of Lee). Clearly, the mechanical bracket in Lee does not supply power via a bus connection of the computer, like the Appellants' claimed invention. Instead, power is supplied to external peripherals in Lee through a cable that runs through the mechanical bracket that is mechanically mounted to the computer chassis and not via a bus connection of the computer.

Therefore, the Examiner took Lee out of context and used improper hindsight when he summarily concluded that Gilbert in combination with Lee discloses all of the Appellants' claimed elements. This is because nowhere in the combined references is there a disclosure of the Appellants' claimed supplying power via a bus connection of the computer to the bus-controlled component from an integrated power supply and if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer.

The "...combination of elements...in a manner that reconstructs the applicant's invention only with the benefit of hindsight...is insufficient to present a *prima facie* case

of obviousness." There must be some reason, suggestion, or motivation found in the references whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself. In re Oetiker, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992) [emphasis added].

Hence, since the Examiner's rejection is based on hindsight, the rejection is improper and must be withdrawn. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986). The case law is well settled and forbids Examiners from taking a reference out of context and using the benefit of hindsight to make improper conclusions and manufacture elements that are not disclosed in the combined references, which is clearly the situation in this case. Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). Therefore, since the cited references are missing at least one limitation of the Appellants' claims 1, 7 and 12, the rejection of claims 1-2, 4-12, and 14-16 should be withdrawn. In Re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Further, even though the combination of Gilbert with Lee do not produce all of the elements of the claimed invention, these references should not even be considered together since the combination of Gilbert with Lee teaches away from the claimed invention. This is because Lee explicitly discloses that the external peripheral devices are purposely "...designed to use only internal supply voltage..." from the mechanical bracket [emphasis added]. Thus, unlike the Appellants' claimed invention, the peripherals devices in Lee cannot receive power from a non-integrated power supply of the computer if a threshold is exceeded.

Consequently, since Lee explicitly states that its peripheral devices are specifically "designed to use only internal supply voltage," the main function, purpose and spirit of Lee would be destroyed if peripheral devices in Lee received power from a non-integrated power supply if a threshold is exceeded, like the Appellants' claimed invention. As such, this "teaching away" prevents obviousness from being established by combining these references. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). This failure of the cited references, either alone or in combination, to disclose, suggest or provide motivation for

the Applicant's claimed invention indicates a lack of a *prima facie* case of obviousness (*MPEP 2143*).

B. The Rejection of claims 3 and 13.

1. The Examiner's Rationale for the rejection of the claims.

The Examiner rejected claims 3 and 13 under 35 U.S.C. §103(a) as being unpatentable over Gilbert (U.S. Patent No. 6,357,011), and Lee (U.S. Patent No. 5,852,544) in view of Kang (U.S. Patent No. 6,253,329). The Examiner stated that although Gilbert and Lee "...do not teach that the non-integrated power supply supplies all of the power when the threshold is exceeded...Kang discloses a device that only receives power from a non-integrated power source...when the necessary power requirements exceed the limits of the integrated power supply...It would have been obvious to modify the method and system taught by Gilbert and Lee to enable the non-integrated power supply to supply all of the power to the peripheral device..." (see page 7, second full paragraph of the March 1, 2005 Final Office Action).

2. The Appellants submit that the Examiner improperly ignored limitations of the Appellants' claimed invention that are not disclosed by the combined cited references, thus, the combined cited references cannot render the claims obvious, so the rejection must be withdrawn.

As argued and for each of the same reasons stated in Section A2. above, Appellants submit that the Gilbert and Lee references in combination with the Kang reference still does not disclose, teach, or suggest all of the claimed features of claimed invention. Specifically, when Kang is combined with Gilbert and Lee, the combination is still missing the Appellants' claimed supplying power via a bus connection of the computer to the bus-controlled component from an integrated power supply and if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer, as argued above.

Further, even though the combination of Gilbert with Lee and Kang do not produce all of the elements of the claimed invention, these references should not even

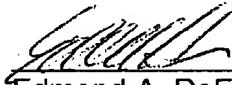
be considered together since the combination of Gilbert with Lee and Kang teaches away from the claimed invention as argued above. Moreover, since dependent claims 3 and 13 depend from the above-argued independent claims 1 and 12, respectively, they are therefore patentable on the same basis. (MPEP § 2143.03). Therefore, because the cited reference does not disclose, teach or suggest the limitations of the claims, as discussed above, this rejection must be withdrawn because the cited reference cannot render the Appellant's claims obvious. *In Re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

IX. CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 1-18 was erroneous, and reversal of the Examiner's decision is respectfully requested. Accordingly, the Appellants submit that all pending claims (claims 1-18) in the current case should be allowed.

Respectfully submitted,

Dated: July 31, 2005



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X. APPEAL BRIEF APPENDIX

The following represents claims 1-16 that are involved in the appeal of the above-identified application and are provided in accordance with the requirements of 37 CFR 1.192(c)(7).

1. A method for supplying power to a bus-controlled component of a computer, comprising:
 - supplying power to the bus-controlled component from an integrated power supply via a bus connection of the computer;
 - determining whether the power supplied exceeds a threshold; and
 - if the threshold is exceeded, supplying power to the bus-controlled component from a non-integrated power supply of the computer.
2. The method of claim 1, wherein if the threshold is exceeded the integrated power supply supplies power up to the threshold and the non-integrated power supply supplies any excess power.
3. The method of claim 1, wherein if the threshold is exceeded the non-integrated power supply supplies all the power.
4. The method of claim 1, wherein high-power components on the bus-controlled component are supplied power from the non-integrated power supply and low-power components on the device are supplied power from the integrated power supply.
5. The method of claim 1, wherein the device is a bus-controlled component and the integrated power supply is a bus slot capable of receiving the bus-controlled component.

6. The method of claim 1, wherein a power sensor is used to determine whether the threshold has been exceeded.

7. A bus power system of a computer for supplying power to a bus-controlled component, comprising:

a bus slot supplying power to the bus-controlled component; and
a bus power handling device connected directly to a power supply of the computer for supplying power directly to the bus-controlled component if a bus slot power threshold is exceeded.

8. The bus power handling device of claim 7, wherein the bus power handling device is disposed between the bus slot and the bus-controlled component.

9. The bus power system of claim 7, wherein the bus power handling device is disposed on the bus-controlled component.

10. The bus power system of claim 8, further including a modified bracket attached to the bus-controlled component for securing the bus-controlled component within a computer case.

11. The bus power system of claim 7, further comprising a power sensor disposed on the bus power handling device that determines whether the bus slot power threshold has been exceeded.

12. A bus power handling device of a computer, comprising:
 - an input area configured to receive a bus-controlled component and an output area configured to be inserted into a bus slot that supplies power to the bus-controlled component;
 - a power sensor that determines whether the bus slot has exceeded a power threshold; and
 - a power supply lead coupled to an external power supply that supplies power to the bus-controlled component via the bus power handling device if the power threshold is exceeded.
13. The bus power handling device of claim 12, wherein the bus-controlled component obtains power from the bus slot until the power threshold is exceeded at which time the power is obtained from the power supply.
14. The bus power handling device of claim 12, wherein the bus-controlled component obtains power from the bus slot and any power in excess of the power threshold from the power supply.
15. The bus power handling device of claim 12, wherein the power threshold is a maximum power allowed by a computer bus standard for the bus slot.
16. The bus power handling device of claim 12, wherein bus slot supplies power to low-power devices on the bus-controlled component and the power supply supplies power to the high-power devices on the bus-controlled component and wherein the power supplied by the bus slot does not exceed the power threshold.